



Наименование дисциплины и код: **Б.2.3. Экология**

Лектор	<u>Kadralieva Aisuluu Kanybekovna</u>
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Количество кредитов:	4 credits
Дата:	2 semester 2017-2018
Цель и задачи курса	<p>The goal of the subject: to encourage students to understand the specific relations between society, nature, human and environment, to give them knowledge about global environmental problems of humanity with the purpose of not only to save but also to improve it.</p> <p>Course objectives:</p> <p>To give students systematic knowledge about interaction between nature and social environment;</p> <p>To teach them how to identify optimal requirements and needs in technology development in order to keep a balance of nature and environment;</p> <p>To teach students to analyse interactions between structural components of society and nature, as well to correlate society development goals with the environmental regularity;</p> <p>To teach students ability to help to make changes in the nature which will keep and develop biosphere in the future.</p>
Описание курса	The main goal of this course is forming and developing environmental thinking of the student, and developing students ability to work on improving quality of environment in their professional and daily life, to provide their own mechanisms on environmental management.
Пре реkwизиты	Without knowledge in math, chemistry and physics understanding of the course is impossible. It all makes nessesary to study biological and other natural, humanitarian science and math.
Пост реkwизиты	After completing the course student should have information about: methods of modeling and assessing ecosystem condition and be able to predict their own impacts from professional activities on environmental processes.
Компетенции	<p>Student should know (professional competencies):</p> <ul style="list-style-type: none">- basic principles about interactions among organisms and their environment, including human and nature;- basic principles of general ecology;- basic principles of environmental management;- legal norms and regulations about environmental protection in KR;- basic elements of social ecology and demography;- basic rules and methods of environmental monitoring;- natural resource allocation system;- basic techniques and methods of engeenering environmental protection;

	<ul style="list-style-type: none"> - basic economic and environmental regulations and payment system for natural resources and environmental protection in KR and abroad; - environmental situation and problems in KR; - basic ways of implementing environmental activities; - to use basic tools of environmental management; - legal norms on protection of flora and fauna;
Политика курса	The policy of the course is systematization of knowledge about interactions among organisms and their environment, including human, formation of the general principles of the environmental processes as a key option on optimization of human activities in environment to find better way on sustainable and stable development.
Методы преподавания:	Lectures, Work in a small teams, Discussions, Lessons using strategy, Role-playing games of critical thinking, Project works
Форма контроля знаний	Current assessment, modules, student-self work, examination.
Литература: Основная Дополнительная	<ol style="list-style-type: none"> 1. Korobkin V.N., Predelski L.V., Ecology. 2009 2. Kulmatov T.N., Ecology. Bishkek 2012 3. Akimova T.A., Haskin V.V., Ecology: University textbook. – M.: Unity, 2010
СРС	<p><u>19.02.2018</u> Discovering and description of environmental systems. Interaction between ecosystem elements. To draw a table «Defining interaction between organisms according to the classification». To prepare a project: «Influence of car exhaust on environment and population health in Bishkek».</p> <p><u>25.03.2018</u> To prepare a presentation: «Specially protected natural areas and reserves in Kyrgyzstan» Project: «Environmental problems of the lake Issyk-Kul» Project «International cooperation in the field of environmental protection»</p> <p><u>29.04.2018</u> Project «Principles of solving global environmental problems («ozone holes», «greenhouse effect», «acid rains»)). Perspectives of developing alternative energy sources. (Report) Project «Environmental problems in a big cities and their growing. The problems of vehicles».</p>
Примечание.	

Theme plan of the course in calendar

№	Date	Lessons topics	Num of hours	Literature	Control form
1	24.01.18	Module 1. General ecology. Introduction. The subject of		1. Korobkin	Quiz

		environment, structure and objectives. Main environmental terms. Consistency.	2	V.N., Predelski L.V., Ecology. 2009	
2	26.01.18	Organism as a holistic system. The levels of biological organization. Organisms system and Earth biota.	2	2.	Quiz
3	31.01.18	Organism and environment interaction. Environment. Environment factors. General regularity of abiotic factors. General regularity of biotic factors. Limiting factors. The biomass resources as environmental factors.	2	Kulmatov T.N., Ecology. Bishkek 2012	Quiz
4	02.02.18	Population. Static and dynamic parameters of population. Life expectancy. Dynamic of population growth. Environmental strategy of survival.	2	3. Akimova T.A., Haskin V.V., Ecology: University textbook.	Quiz
5	07.02.18	Biotic community. The specific structure of biocenosis. Spatial structure of biocenosis. Ecological niche.	2	– M.: Unity, 2010	Quiz
6	09.02.18	Ecosystem lifestyle. Organization (structure) of ecosystems. Ecosystem energy. Productivity of ecosystems and biomass.	2	4. Tihonov A.I., Environmental	Quiz
7	14.02.18	Dynamic and development of ecosystems. Successions. Sustainability of ecosystems.	2	problems: Lectures. – Ivanovo, 2002.	Question
8	16.02.18	Biosphere doctrine. Biosphere as a global ecosystem of the Earth. Biosphere extension and borders. The lifecycle in nature.	2		Question-answer
9	21.02.18	Natural ecosystems of the Earth. Classification of natural biosphere on a landscape basis. Ground ecosystems. Fresh-water ecosystems. Sea ecosystems. Whole biosphere as a global ecosystem.	2		Quiz
10	23.02.18	The main directions of the biosphere evolution. Noosphere as a new stage of biosphere's development.			Quiz
11	28.02.18	Human ecology. Biosocial nature of human and environment. Human and population. Nature resources as a limiting factors of human survival.	2		Question-answer
12	02.03.18	Anthropogenic ecosystems. Man and ecosystems. Agricultural ecosystems. Industrial and urban ecosystems.	2		Quiz

13	07.03.18	Environment and man's health. Influence of natural and environmental factors on the man's health. Influence of socio-environmental factors on man's health. Hygiene and man's health.	2		Control writing
14	09.03.18	Module 2. Applied ecology. Environmental crisis. Indicators of environmental crisis. Global environmental problems.	2		Quiz
15	14.03.18	Anthropogenic impacts on biosphere. Anthropogenic impacts on atmosphere. Environmental impacts of atmosphere pollution.	2	5. Voronkov N.A., General, social and applied ecology: Textbook for students. M.: Agar, 2008. 6. Petrov K.M. General ecology. 2008. 7. U.Odum, Ecology. M.: 2007. 8. Stepanovskih A.S. «General ecology» M.:2009. 9. Mavrishev V.V. «General ecology basics» Minsk, 2008. 10. Vernandsk	Quiz
16	16.03.18	Anthropogenic impacts on hydrosphere. Hydrosphere pollution. Environmental influence on hydrosphere pollution.	2		Quiz
17	23.03.18	Anthropogenic influence on lithosphere. Soil degeneration and consequences.	2		Lecture
18	28.03.18	Anthropogenic influence on biotic communities. Environmental functions of forests. Anthropogenic influence on forests.			Quiz
19	30.03.18	Importance of wildlife in biosphere. The reasons of wildlife depopulation.	2		Quiz
20	04.04.18	Special and extreme influences on biosphere. Environment pollution by waste production and consumption. Noise impact. Impact of radiation and electromagnetic influence. Extreme influence on biosphere.	2		Quiz
21	06.04.18	Module 3 Environment and environmental protection. Basic principles of environmental protection and rational nature management. Environmental regulation.	2		Interview
22	11.04.18	Engineering environmental protection. Atmosphere, hydrosphere, lithosphere and biomass protection.	2	Interview	
23	13.04.18	Special and extreme influences protection. Protection of environment from pollution by waste production and consumption. Protection from noise influence. Protection from	2	Interview	

		radiation and electromagnetic influence.		yi V.I. Biesphere, different publications.	
24	18.04.18	Environment protection management system. Environmental law. Environmental management, audit and certification. Environmental monitoring. Legal responsibility for environmental offences.	2		Quiz
25	20.04.18	Environment and economics. Economic regulation in the field of environment.	2		Question
26	25.04.18	Public consciousness ecologization	2		Quiz
27	27.04.18	International cooperation	2		Quiz
28	02.05.18	Conception of sustainable development.			Quiz
29	04.05.18	The ways of solving environmental problems in Kyrgyzstan.	2		Quiz
30	11.05.18	Final lesson	2		Control test
Total hours:			60 hours		

Student's individual work

№	Weeks Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Points
		February				March						April						
1	Current control	15				15						10						40 points
2	SIW deadlines.	19.02 - 26.02. 2018г.				19.02 – 26.02. 2018г.						23.02 – 30.02. 2018г.						